

REMARKS

Claims 2 to 19 are pending in the application.

Rejection under 35 U.S.C. 102

Claims 18, 2, 4-10 stand rejected under 35 U.S.C. 102(b) as being anticipated by *Ushida* (US 5,960,757).

Claim 18 has been amended to include the feature that the first supply groove alternately connects the first surface of the locking element to the first pressure chamber or the second pressure chamber. *Ushida* discloses oil passage 25 that connects the advance chamber (pressure chamber) 13 to the hydraulic chamber 24 at the front end of the stopper piston 7. This oil passage 25 does not alternately connect the chamber 24 (i.e. the pressure-loadable surface of the locking element) to the advance chamber 13 and the retard pressure chamber 11 (see Fig. 2 of *Ushida*).

The chamber 23 with the pressure-loaded flange surface of the stopper piston 7 is supplied through passages 39, 36, 29, 31, 32, 33 with oil by pump 46 and drained through the same passages to the tank by switching the valve 49 from position 49a (Fig. 5) to 49c (Fig. 6). No supply groove that connects alternately one of the pressure-loadable surfaces of the locking element to the first pressure chamber or the second pressure chamber is provided.

Reconsideration and withdrawal of the rejection of claim 18 pursuant to 35 USC 102 are therefore respectfully requested.

Rejection under 35 U.S.C. 103

Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Ushida* (US 5,960,757) in view of *Golovatai-Schmidt* (US 2003/0084863). (The office action states that the rejection is based on "Ushida in view of Ichinose as applied to claim 18"; however claim 18 stands rejected over *Ushida* alone so that applicant assumes that Ichinose has been mentioned in error.)

Claim 3 should be allowable as a dependent claim.

Claims 16, 17 stand rejected under 35 U.S.C. 103(a) as being unpatentable over

Ushida (US 5,960,757) in view of *Trzmiel* (US 6,085,708). (The office action states that the rejection is based on "Ushida in view of Ichinose as applied to claim 18"; however claim 18 stands rejected over Ushida alone so that applicant assumes that Ichinose has been mentioned in error.)

Claims 16 and 17 should be allowable as dependent claims.

Claim 19 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Ushida* (US 5,960,757) in view of *Fukuhara et al.* (US 6,460,496).

Ushida does not show a throttle location and does not suggest slowing the rotor.

Fukuhara et al. is cited by the examiner as showing throttle grooves at various locations in order to narrow opening areas; the examiner refers to col. 25, line 60, to col. 26, line 3.

The cited text portion (claim 8) states that "at least one part of the purge path, the discharge hole, ... is equipped with a throttle for narrowing the opening area". The relevant disclosure in connection with claim 8 can be found in col. 6, lines 23ff, of *Fukuhara et al.*. The general relevance of the throttles is explained as follows (lines 28 to 47 of col. 6):

"... when the purge path is equipped with the throttle, it is possible to increase resistance produced in the purge path and to restrict to pass oil, which has incompressibility and high-viscosity, in the air-mixed oil through the purge path. At the same time, it is possible to pass selectively air, which has compressibility and low-viscosity, through the purge path. When the discharge hole or the drain path is equipped with the throttle, it is possible to restrict to discharge the oil. In case a malfunction occurs mechanically in the locking pin in the locked state to remain the purge path to be opened for any reason, it is possible to reduce the amount of oil consumed repeatedly to a minimum level. Therefore, it is possible to avoid engine failure from causing owing to lack of lubricant. When the retardation side partitioned pressure path or the unlocking hydraulic pressure supply path includes the throttle, it is possible to direct the amount of air-mixed oil, which is more than that of the retardation side partitioned pressure path or the unlocking hydraulic pressure supply path, toward the purge path."

Greater detail of the operation as proposed in the cited reference is provided in col.

- 7 -

5/25/06: Amd for Ser. No. 10/707,523 - Inventor(s): Knecht et al. - Filing Date: 12/19/2003

6, line 48, to col. 8, line 39.

There is no teaching that the throttle is used to reduce the speed of the rotor when approaching an area of the locking position of the locking bolt.

Of particular relevance are Figs. 10 to 13 of the cited reference and the correlated description that demonstrate the operating principle in comparison to the no-hysteresis operation as shown in Fig 5 of *Fukuhara et al.*. It is apparent that the cited reference is directed to slowing the pin. But nowhere in the disclosure is there any suggestion to slow the rotor in the critical area of the locking position of the locking bolt as claimed in claim 19 in order to ensure proper engagement of the locking bolt.

Also, all throttles of the cited reference are provided within the rotor itself; there is no suggestion to provide a throttle location that is correlated with the supply to the pressure chambers for slowing the rotor. *Fukuhara et al.* does not shown first and second throttle grooves that are arranged between stays of the stator so that the vanes of the rotor cover the first and second throttle grooves at least partially.

Reconsideration and withdrawal of the rejection of claim 19 pursuant to 35 USC 103 are therefore respectfully requested.

ALLOWABLE SUBJECT MATTER

Claims 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 11 has been rewritten in independent form without including the feature of claim 2 from which it depends since the feature of claim 2 (locking disc) appears to be irrelevant to the allowable subject matter of claim 11.

Claims 11 to 15 should thus be allowable.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned


- 8 -

5/25/06: Amd for Ser. No. 10/707,523 - Inventor(s): Knecht et al. - Filing Date: 12/19/2003

would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on May 25, 2006,


Ms. Gudrun E. Hockett, Ph.D.
Patent Agent, Registration No. 35,747
Lönsstr. 53
42289 Wuppertal
GERMANY
Telephone: +49-202-257-0371
Facsimile: +49-202-257-0372
gudrun.draudt@t-online.de

GEH
Encl.: time extension petition (1 sheet)

- 9 -

5/25/06: Amd for Ser. No. 10/707,523 - Inventor(s): Knecht et al. - Filing Date: 12/19/2003